

MISSOURI CONSERVATIONIST

VOLUME 79, ISSUE 6, JUNE 2018
SERVING NATURE & YOU





**WITHOUT TREES...
WE'D BE UP A CREEK
WITHOUT A PADDLE.**



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VOLUME 79, ISSUE 6



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American
mink

MISSOURI CONSERVATIONIST



ON THE COVER

A black swallowtail caterpillar eats a bit of parsley.

📷 **NOPPADOL PAOTHONG**

150mm lens, f/4
1/160 sec, ISO 800

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Letters to the Editor

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IN AWE

I've always been extremely impressed with Noppadol's skill with a camera. I was floored by the photo on the back cover [May 2018]. His work always leaves me in awe, but this photo really got me.

Craig Thomas
O'Fallon

TURTLES AND HELLBENDERS

Thank you for the May 2018 issue of *Missouri Conservationist*. I loved your article on protecting turtles [Protecting Missouri Turtles, Page 10]. I have a three-toed box turtle. Her name is Tuttle. I got her while working on the Reptile and Amphibian Merit Badge for Boy Scouts. I like to hunt, fish, and mostly do things outdoors and love living in Missouri because of the beauty of our forests.

Jacob Peterson Springfield

The very day I received and read the May issue with its wonderful article about protecting Missouri's turtles, I saw a turtle that had been run over while crossing the asphalt. In my life, I have pulled over and assisted many a turtle, large and small, across some road. Kudos to the article writer for pointing out that you should always place a road-crossing turtle on the side it was headed, otherwise it might turn around and try again, thereby doubling its likelihood of being run over. Why did the turtle cross the road? To get to the other side, of course.

John Smelcer, Ph.D. Kirksville

Thank you for the wonderful article and action taken by MDC to close commercial harvesting of Missouri's turtles. As an enthusiastic lover of Missouri reptiles, I'm so thankful that the state recognizes their ecological significance and is working hard to ensure that future generations will experience the unbridled joy of happening upon a box turtle in the backyard or a softshell turtle while floating our lovely Ozark streams. This is the best news!

Jennifer Conner Pierce City

Great info on hellbenders [Nature Lab, Page 4] and turtles in the May issue. Many years ago, on a fishing trip on Bull Shoals Lake, I caught two of them on fish bait. Surprised is an understatement. They apparently don't necessarily need a river or



Common snapping turtle

creek to survive. And folks — please just leave the turtles be. Let them just continue doing their jobs as nature designed.

Rich Murray St. Louis County

EATING CLOSE TO HOME

While we always strive to tell the best conservation stories, there are times when a key message gets inadvertently overshadowed in the process. In the article *Eating Close to Home* in the May issue [Page 14], the focus was on the interest of locally grown food and how it fills a niche in agriculture. While this is an important and growing area, we recognize it is only part of the story of modern agriculture in Missouri. We want to assure our readers that we support agriculture with all its diversity and recognize its importance to the Missouri economy.

—THE EDITORS

CORRECTION

The location of May's cover animal, the common snapping turtle, was misidentified on Page 1 of the magazine. The turtle was photographed at Loess Bluffs National Wildlife Refuge. We apologize for the error. —THE EDITORS

NOPPADOL PAOTHONG

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Up Front

with Sara Parker Pauley

✱ My husband and I live close to the Missouri River and this time of year, if water levels allow, we try to fit in a sunrise or sunset float with our kayaks. We are always amazed at the beautiful landscape and abundance of wildlife as the Big Muddy takes us downstream, often without much paddling other than steering and staying with the current. It's fun some days to just go with the flow.

On occasion, when spring rains lead to backwater flooding, we instead put our kayaks in our neighbor's flooded field that we lovingly refer to as Lake Claysville. Our neighbor will join in the fun with his kayak as well sometimes, and we'll paddle the field together.

More than a decade ago, it was in this same flooded field that my husband proposed marriage as we paddled, each in our own kayak side by side, drinking coffee from our thermoses and watching the sun emerge through the light fog blanketing the Missouri River bottoms. I remember his proposal was something about being paddling partners for the rest of our days. Not a lot of fanfare or fancy talk, but nearly perfect from my perspective. You'll learn more about the fun of kayaking in Missouri on Page 18.

I think kayaking with a partner or friend represents a bit about life — we're each making our own way, but it's better if you're sharing it with someone side by side, going with the flow together.

Sara Parker Pauley

SARA PARKER PAULEY, DIRECTOR
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mdc.mo.gov 3

Nature LAB

by Bonnie Chasteen

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

CAVE AND KARST MANAGEMENT

Tumbling Creek Cavesnail Recovery

✱ The Tumbling Creek cavesnail isn't much bigger than a speck of gravel. It clings to creek rocks in Tumbling Creek Cave, the most biologically diverse cave west of the Mississippi. Because the snail is highly sensitive to environmental changes, it is a good indicator of the cave's ecological health. It is also at risk of extinction.

Fortunately, the snail has a team dedicated to its recovery. Fifteen years into the effort, the Cavesnail Working Group, which includes several agencies, researchers, and nonprofits as well as cave owners Tom and Cathy Aley, is seeing a rise in cavesnail numbers.

Fisheries Biologist David Woods is the current Tumbling Creek recovery plan leader for MDC's cavesnail efforts. "We survey the cavesnail population twice a year, once in the spring and again in the fall," he said. "In the mid-2000s, we saw no cavesnails in



Dr. David Ashley examines a ceramic tile placed in Tumbling Creek Cave for use in a cavesnail monitoring protocol.

In their 15th year of work, the recovery team sees a slow but steady rise in the cavesnail's numbers

the surveys. Now we routinely find snails."

Aside from monitoring the cave's water quality and conducting twice-yearly surveys, the team also controls the snail-eating ringed crayfish. It lives in nearby Bull Shoals Lake, which can backflow into the cave during heavy rains. "We contract with the Tumbling Creek Cave Foundation to trap and remove crayfish every week," Woods said.

Because what happens above ground affects cave life below, the team focuses much of its efforts on the surrounding landscape. Since the early 2000s, dumps have been cleaned up, sewage systems have been upgraded, and erosion on the land that drains into the cave has been dramatically reduced.

"Lessons learned from implementing the cavesnail's recovery plan have improved the state's cave and karst management as a whole," Woods said.

Tumbling Creek Cavesnail Working Group

- U.S. Fish and Wildlife Service (USFWS) (recovery plan lead)
- Landowners, including the Aleys and Tumbling Creek Cave Foundation
- Missouri Department of Conservation
- U.S. Forest Service
- U.S. Army Corps of Engineers
- Missouri Department of Transportation
- Numerous independent scientists

Cavesnail Discovery, Decline, and Recovery



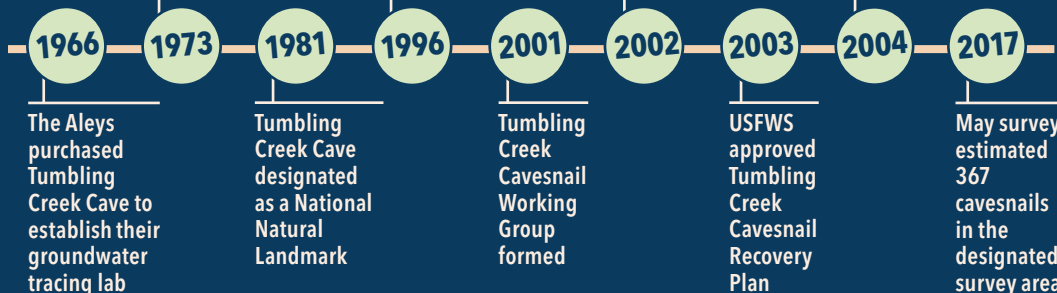
The Aleys discovered the cavesnail and estimated the population at 15,000+

Missouri Western State University Biology Professor Dr. David Ashley started monitoring the snail

Survey yielded no snails; USFWS added cavesnail to endangered species list



Tumbling Creek Cave Foundation established



In Brief

News and updates from MDC



MDC REPORTS MORE CWD POSITIVES

NEW CASES BRING
TOTAL NUMBER
OF FREE-RANGING
DEER IN MISSOURI
CONFIRMED TO
HAVE CWD TO 75

➔ MDC found 33 new cases of chronic wasting disease (CWD) following the testing of 24,486 free-ranging Missouri deer through the 2017–2018 sampling and testing efforts. The new cases were from the following counties: Adair (3), Cedar (1), Franklin (4), Jefferson (1), Linn (7), Macon (3), Perry (1), Polk (3), St. Clair (4), and Ste. Genevieve (6).

Of the 33 new cases, 16 were from hunter-harvested deer, one was from a road-killed deer, and 16 were from our post-season targeted culling efforts in the immediate areas where previous cases have been found.

This year's findings bring the total number of free-ranging deer in Missouri confirmed to have CWD to 75. For more information, visit mdc.mo.gov/cwd.

MDC will again require mandatory sampling of deer harvested during the opening weekend of the fall firearms deer season, Nov. 10 and 11, in and around counties where the disease has been found. We will again offer voluntary CWD sampling during the entire fall and winter hunting season for deer harvested in these same counties. The Centers for Disease Control and Prevention recommends hunters in areas known to have CWD have their deer tested before consuming the meat.

Starting in July, more information on specific counties, sampling locations, and requirements will be published in the *2018 Fall Deer & Turkey Hunting Regulations and Information* booklet, available where permits are sold and online at mdc.mo.gov/cwd.

FREE FISHING DAYS JUNE 9 AND 10

Get hooked on fishing in Missouri. Our annual Free Fishing Days occur June 9 and 10. During Free Fishing Days, anyone can fish in the Show-Me State without a fishing permit, trout permit, or trout park daily tag.

Other fishing regulations, such as limits on size and number of fish an angler may keep, remain in effect. Special permits may still be required at some county, city, or private fishing areas. Trespass laws remain in effect on private property.

CELEBRATE PRAIRIES

Prairies help keep water clean, control flooding, improve soil, store carbon, provide wildlife habitat, and bring beauty to our lives. Prairies are vitally important but vanishing landscapes. Join MDC and the Missouri Prairie Foundation to celebrate National Prairie Day and Missouri prairies by learning more about their importance. For more information, visit moprairie.org.

National
Prairie Day
is June 2

TAKE A HIKE

Join MDC and the American Hiking Society in celebrating National Trails Day by hitting your favorite trail — or finding a new one to explore. Visit short.mdc.mo.gov/Z4V to find a trail near you. MDC's conservation areas offer 830 miles of designated hiking trails. Share your adventure with us on Instagram at [instagram.com/moconservation](https://www.instagram.com/moconservation).

National
Trails Day is
June 2

GIVE TURTLES A BRAKE

Spring rains and warmer temperatures entice turtles out of their burrows in search of food, mates, and nesting sites. Sometimes these searches lead them across roadways.

MDC asks motorists to slow down when they see a turtle in the road and safely steer around it, if possible. When helping a turtle cross a road, keep human safety as the number-one concern. Check for traffic and move the turtle across the road in the direction it is traveling.

Three-toed box turtles, ornate box turtles, and common snapping turtles are species often seen crossing roads in Missouri. For more information on Missouri turtles, visit MDC's online *Field Guide* at short.mdc.mo.gov/Zi4.



Ornate box turtle

Ask MDC

Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov
or call 573-522-4115, ext. 3848.

Q: Can you please help me identify this wildflower?

➔ This is a black-eyed Susan (*Rudbeckia hirta*), but there's a reason it doesn't look like the familiar yellow-and-black perennial we know and love. These flowers have been plagued by a condition called aster yellows, a chronic plant disease that affects native plants, ornamentals, and vegetable crops.



Black-eyed
Susan plagued
by aster yellows

Q: A box turtle laid her eggs in my front yard. Is there a way I can protect them from predators? And, how long before they hatch?

➔ Box turtle eggs are easy targets for predators such as raccoons, who often find the nest within three to five days due to the scent of the female turtle. But turtle nests can be safeguarded with a dome of chicken wire. Simply leave a couple of 2-inch gaps around the base of the dome. This will allow the hatchlings to slip through, while preventing predators from entering.

In Missouri, most egg laying takes place from mid-May to early July. Usually at dusk, females select an elevated, open patch of loose soil where she digs a 3- to



Normal Missouri
black-eyed Susans

4-inch hole with her hind limbs. The eggs are laid mostly at night.

Accurately predicting the length of the incubation period is difficult, since several factors — humidity, temperature, and weather conditions — all play a role. Typically, baby turtles hatch in about three months. However, if eggs are laid in the late summer, hatchlings can overwinter in the nesting chamber, emerging the following spring.



Q: What animal would dig up a yellowjacket nest and why? This is the third one I've found this year.

➔ Skunks, armadillos, raccoons, badgers, and even bears are major predators of yellowjackets (*Vespidae*). Two native species occur statewide, and an introduced German yellowjacket is expanding its range in Missouri.

These wasps often nest underground in cavities and rodent burrows. Their paperlike nests feature parallel layers of comb with downward facing cells.

They are famous for

aggressively defending their nest sites and pose a significant stinging threat. Mammals mitigate the danger by digging up the nests at night when the colony is inside and motionless. Since yellowjackets rely mostly on sight to sting predators, their ability to protect the nest is greatly reduced in the dark. A single skunk can easily wipe out an entire colony in a night, eating all the adults and brood (larvae).

Yellowjackets and most other wasps don't make honey, but they are a great source of protein for the raiding mammals.

AGENT ADVICE

from

Will Carr

JASPER COUNTY
CONSERVATION AGENT

If the deep croak of Missouri's bullfrogs and green frogs are calling your name, you're in luck. Frogging season opens at sunset on June 30. This is a great time to introduce kids to outdoor sports. Frogging is fun, hands-on, and the weather is usually pretty nice. Since the action occurs at night, it's best to scout your location beforehand. Be on the lookout for sinkholes, root wads, or anything that may trip you up in the dark. This is a unique season because frogs can be harvested with a fishing or a hunting license and an artificial light can be used. For a full list of legal methods, check the *Wildlife Code of Missouri*. Get hoppin'!



What IS it?

Can you guess this month's natural wonder?

The answer is on
Page 8.





GOOSEBERRY-BLUEBERRY CRUNCH

These are two fruits that you are unlikely to find fresh in Missouri at the same time. Gooseberry season usually is ending by the time blueberries begin ripening. However, should you have socked away a few bags in your freezer during the picking season for each, you can make this quick little treat when the cold wind blows.

Serves 6-8

INGREDIENTS:

4 cups gooseberries
2 cups blueberries
1 cup sugar
½ cup flour
1 teaspoon cinnamon
1 teaspoon lemon juice
½ cup water

TOPPING:

½ cup flour
½ cup brown sugar
¼ cup rolled oats
¼ cup butter, melted
½ cup chopped nuts
(pecans, walnuts
or combination)

PREHEAT oven to 375°F. In a large bowl, combine gooseberries, blueberries, sugar, flour, cinnamon, lemon juice, and water; mix well. Pour into a greased 8½- by 8½-inch baking dish.

IN a small bowl, combine flour, brown sugar, oats, butter, and nuts. Sprinkle topping over fruit. Bake for about 1 hour or until berries bubble, top is nicely browned, and mixture is set.

FRESH OR FROZEN, SWEET OR TART

The amount of sugar in this recipe makes for a slightly tart result. Should you like things a little sweeter, add a bit more sugar. If nature has allowed for both berries to be available concurrently, then, by all means, try this dessert with the fresh fruit. However, frozen berries work well, and there is no need for thawing, either.



Find more wild recipes in *Cooking Wild in Missouri*. Order yours at mdcnatureshop.com.



WHAT IS IT? GREEN TREEFROG

This bright-green amphibian is found mainly in the Bootheel. By day, it hides in the green leaves of the cattails, but by night, it is on the hunt. Green treefrogs (*Hyla cinerea*) eat insects, which helps to keep those populations in check. Males chorus in the evenings from May to early August, and together, they sound something like distant Canada geese.



GREEN TREEFROG: JIM RATHER; GOOSEBERRY-BLUEBERRY CRUNCH: BERNADETTE DRYDEN

MDC SETS MIGRATORY GAME BIRD AND WATERFOWL HUNTING SEASONS

✦ 2018 Migratory Game Bird Hunting

MOURNING DOVES, EURASIAN COLLARED DOVES, AND WHITE-WINGED DOVES

Season: Sept. 1 through Nov. 29

Limits: 15 daily and 45 in possession combined total for all three species

Hours: One-half hour before sunrise to sunset

SORA AND VIRGINIA RAILS

Season: Sept. 1 through Nov. 9

Limits: 25 daily and 75 in possession combined for both species

Hours: One-half hour before sunrise to sunset

WILSON'S (COMMON) SNIPE

Season: Sept. 1 through Dec. 16

Limits: 8 daily and 24 in possession

Hours: One-half hour before sunrise to sunset

AMERICAN WOODCOCK

Season: Oct. 15 through Nov. 28

Limits: 3 daily and 9 in possession

Hours: One-half hour before sunrise to sunset

✦ 2018-2019 Waterfowl Hunting

TEAL

Season: Sept. 8-23

Limits: 6 daily and 18 in possession

Hours: Sunrise to sunset

DUCKS

Season:

- North Zone: Nov. 3 through Jan. 1, 2019
- Middle Zone: Nov. 3 through 9 and Nov. 15 through Jan. 6, 2019
- South Zone: Nov. 22 through 25 and Dec. 3 through Jan. 27, 2019

Bag Limit: 6 ducks daily with species restrictions of:

- 4 mallards (no more than 2 females)
- 3 scaup
- 3 wood ducks
- 2 redheads
- 2 hooded mergansers
- 2 pintails (new limit)
- 2 canvasbacks
- 2 black ducks
- 1 mottled duck



Teal hunters at Fountain Grove

Possession Limit: Three times the daily bag or 18 total, varies by species

Hours: One-half hour before sunrise to sunset

COOTS

Season: Same as duck season dates in the respective zones

Limits: 15 daily and 45 in possession

Hours: One-half hour before sunrise to sunset

SNOW GEESE (WHITE AND BLUE PHASES) AND ROSS'S GEESE

Season: Nov. 11 through Feb. 6, 2019

Limits: 20 blue, snow, or Ross's geese daily with no possession limit

Hours: One-half hour before sunrise to sunset

WHITE-FRONTED GEESE

Season: Nov. 11 through Feb. 6, 2019

Limits: 2 daily and 6 in possession

Hours: One-half hour before sunrise to sunset

CANADA GEESE AND BRANT

Season: Oct. 6-14 and Nov. 11-Feb. 6, 2019

Limits: 3 Canada geese and brant in aggregate daily, 9 in possession

Hours: One-half hour before sunrise to sunset

More Information

For more information on migratory-bird hunting and waterfowl hunting, visit short.mdc.mo.gov/ZZn and select the specific species, or get a copy of the *Waterfowl Hunting Digest and Migratory Bird Hunting Digest* available beginning in July where hunting permits are sold.

LIGHT GOOSE CONSERVATION ORDER

Season: Feb. 7 through April 30, 2019

Limits: No daily or possession limits

Hours: One-half hour before sunrise to one-half hour after sunset

YOUTH HUNTING DAYS

- North Zone: Oct. 20 and 21
- Middle Zone: Oct. 20 and 21
- South Zone: Nov. 17 and 18

Limits: Same as during regular waterfowl season

Hours: Same as during regular waterfowl season

✦ Falconry Seasons

FALCONRY SEASON FOR DOVES

Season: Sept. 1 through Dec. 16

Limits: 3 daily and 9 in possession, singly, or in the aggregate (any ducks, coots, or mergansers taken by falconers must be included in these limits)

Hours: One-half hour before sunrise to sunset

FALCONRY SEASON FOR DUCKS, COOTS, AND MERGANSERS

Season: Open during duck seasons (September teal season, youth hunting days, and duck seasons) and Feb. 10 through March 10, 2019

Limits: 3 daily and 9 in possession, singly, or in the aggregate during the regular duck-hunting seasons (including teal and youth seasons) and extended falconry seasons (any doves taken by falconers must be included in these limits)

Hours: One-half hour before sunrise to sunset



Black Swallowtail Butterflies

FROM CATERPILLAR TO BUTTERFLY, IT'S FUN TO WATCH THESE JEWELS OF THE SKY

by Noppadol Paothong

Last summer, my neighbor stopped by and said she was concerned that monarch caterpillars were eating her garden. I was curious.

When I visited her house, I didn't see any milkweed, which is the monarch caterpillar's typical food. Instead, she had several pots of parsley and on them were greenish caterpillars with black stripes and bright-yellow dots. They did look somewhat like monarch caterpillars from a distance, but upon closer examination, I realized they were actually black swallowtail caterpillars, also known as parsley caterpillars.

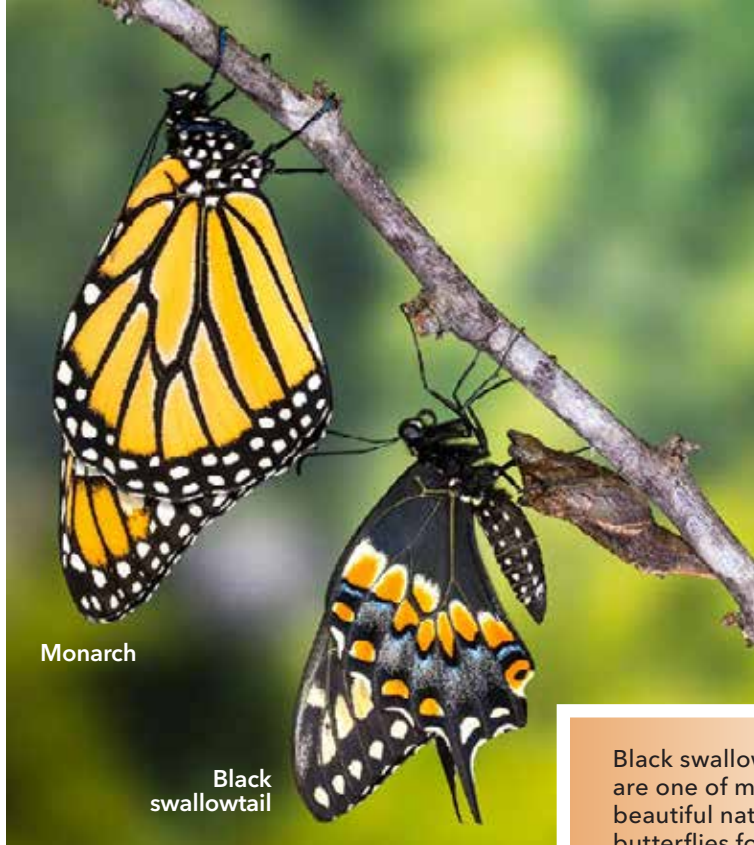




The black swallowtail (*Papilio polyxenes*) has a wingspan of 3-4 inches. The upper sides of its wings are dark blue to black with rows of yellow spots along the edges of its hindwings and forewings.

A male black swallowtail (above) has a row of large, light-colored spots across the middle of his wings. A female (left) has much smaller spots and wears a larger patch of beautiful blue scales on each lower wing.

Butterflies smell with their antennae and "taste" with their feet. This is how they determine the right plant to lay eggs on.



Monarch

Black swallowtail



When the shell turns clear, the hatch is near. It takes a few hours for the new caterpillar to emerge.

Eggs hatch in 4-10 days.



Monarch



Black swallowtails

Black swallowtails are one of many beautiful native butterflies found in Missouri. Although monarch butterflies and black swallowtail butterflies aren't similar in appearance, their caterpillars have similar color patterns of green, yellow, and black, and could easily be mistaken for one another.

In Missouri, the black swallowtail has two generations a year.

The larval stage lasts about two weeks, as the caterpillar transitions through 4-5 phases, or instars.



Three days old



Seven days old



Once emerged, the caterpillar will eat the shell.

The first group of butterflies emerges between late April and early June after overwintering in the chrysalis. They mate, and then the females lay small white eggs on the underside and tops of leaves. The eggs hatch in three to five days. The caterpillar that emerges is black with a white band around its middle. As it grows, it develops reddish-orange spikes on its body. Later, the white band disappears, and the caterpillar develops green-and-black bands with yellow spots.

A single female black swallowtail may lay up to

400

eggs during her short life span.

Scientists estimate only

ONE OUT OF EVERY 100

eggs laid will make it to

a butterfly.

During each instar, the caterpillar sheds its skin and eats it for additional nutrients.



Ten days old

The transition from caterpillar to chrysalis takes about 24 hours.




When the caterpillar gets ready to pupate, it will scrunch along a stick or stem and then spin its silk. It attaches itself to the stem with a long silk thread around its body. The chrysalis may vary in color from bright green and yellow to dull brown and tan. It pupates for nine to 11 days unless it's in the generation that overwinters.

The second group of butterflies emerges in late summer. The second generation mates and lays eggs. If the chrysalis doesn't form until late summer, it overwinters and comes out the following spring.



The black swallowtail caterpillar has a forked gland, called an osmeterium. It is bright orange and pops up when touched or disturbed, letting out an unpleasant smell.





Most adults live about two weeks, though some may survive up to 35-40 days.

After 10-12 days in chrysalis, the adult emerges.

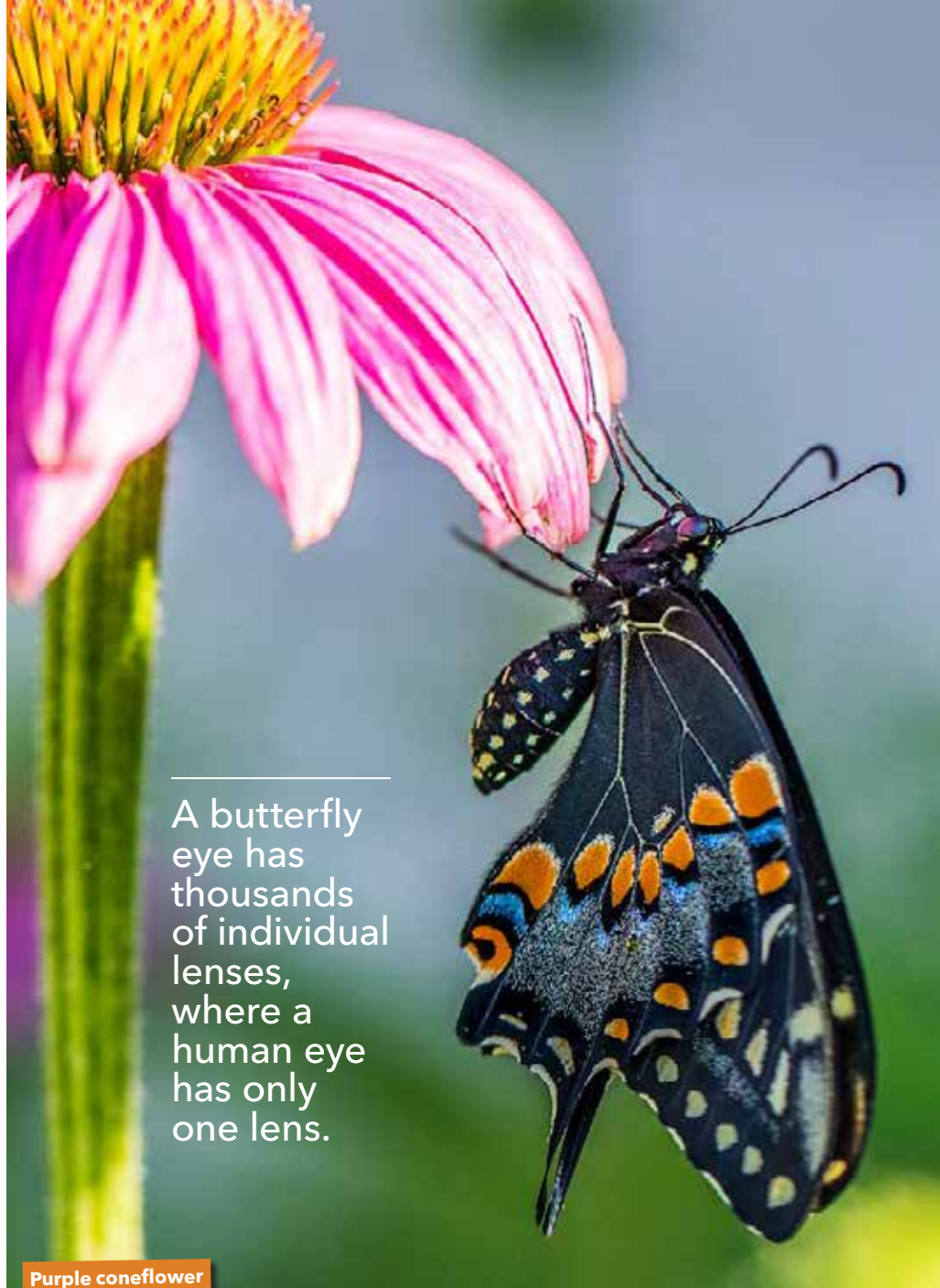
Before it can fly, the newly emerged adult hangs upside down for about one hour. Its body pumps fluid through the vein structure of the wings to inflate them, then the wings dry and harden.

The adult black swallowtail butterfly looks a lot like its poisonous cousin, the pipevine swallowtail. This resemblance protects the non-poisonous black swallowtail from predators.



Pipevine swallowtail

Parsley is a favorite food for growing black swallowtail caterpillars.



A butterfly eye has thousands of individual lenses, where a human eye has only one lens.

Purple coneflower

Black swallowtails feed on a variety of plants, including carrots, parsley, dill, fennel, Queen Anne's lace (also called wild carrot), milkweed, phlox, and rue. They are also attracted to native flowers.

Although black swallowtail caterpillars feed on a number of cultivated plants, they are not a reported nuisance in the commercial horticulture industry. If control is required in home gardens, handpicking is recommended.

We are fortunate to have a variety of butterflies during the summer months in Missouri, and you can attract them to your yard by planting more natives.

For the past several years, my family has been slowly converting our yard into a native plant haven that includes a variety of flowers, including milkweed, to attract pollinators. Many species of butterflies, including black swallowtails, have become regular visitors to our yard.

After my first encounter with black swallowtail caterpillars in my neighbor's yard, I've taught some of my neighbors the importance of adopting good habitats that not only benefit native pollinators but also other wildlife.

It is fun and exciting to watch these beautiful flying jewels in your yard. ▲



Native plants, such as swamp milkweed, cardinal flower, and coreopsis can help turn any yard into butterfly-friendly habitat.



Noppadol Paothong has served the Missouri Department of Conservation as a staff photographer for the past 12 years. He strives to help people connect with conservation issues that he cares deeply about. For over a decade, he has documented the North American grassland grouse and shared his work to raise awareness of their fragile habitat.



A gentle float down
Big Piney River

WITH PADDLE IN HAND

KAYAKING GIVES
NATURE OUTINGS A WHOLE
NEW PERSPECTIVE

by Gladys J. Richter | photographs by David Stonner

GROWING UP, I enjoyed many days on the banks of Missouri streams. My father and I spent hours fishing for whatever was biting. During the lazy days of summer, we often waded and fished a stretch of stream from sunrise to sunset. Sometimes we took a small aluminum boat out on the water to get closer to the fish. No brush pile, weed bed, or rocky riprap was safe from our lures while we were in that boat. Even if we didn't catch a single fish, it was still a good day on the water. There was so much to see — basking red-eared sliders, bright yellow prothonotary warblers, and playful mink along the stream's bank.

Fast forward to the present, and I'm still enthused about viewing Missouri's wildlife from my light blue kayak, floating leisurely on the Gasconade, Niangua, or Piney.

A Kayak Can Bring You Closer to Nature

Kayaks come in many sizes, styles, and designs. Some enthusiasts prefer sit-in styles, while others swear by sit-on-tops. Each has its advantages and disadvantages, and individual selection comes down to research, recreational purpose, and personal preferences. Generally speaking, a wider kayak provides a more stable float. For less wind resistance, a style with lower sides is a good choice. The double-bladed paddle allows for rhythmic, carefree, side-to-side solo steering. With no motor sound or bright flashes of metallic aluminum, a kayak can bring you closer to nature.



EASY FISHING

Kayaking allows fishers quiet access to fishing hotspots.

“A SOFTLY PADDLED KAYAK OFFERS A CLOSER VIEW OF OUR FEATHERED FRIENDS IN THEIR NATURAL HABITAT.”

Fishing

It was my passion for fishing that led me to choose a kayak over a boat or canoe. Owning, maintaining, and storing a boat can be costly. Transportation can also be a problem, especially if you have a small vehicle. Canoes are an option, but they are often heavier and more cumbersome. In my case, a small, lightweight kayak was the answer. At less than 40 pounds, the 9.5-foot kayak I chose was manageable without a lot of muscle. It was easy to secure and transport on my vehicle's roof and store in the garage.

Equipped with only a rod and a fishing vest for gear, I became almost one with the water in my kayak, sneaking up on spooky trout and other game fish. I launched my kayak below my intended fishing area and paddled upstream. On the float back, I often fished areas that looked promising — submerged logs, large rocks, and weed beds.

Soon, I was using my kayak for more than just fishing. Bird-watching, which I usually enjoyed in tandem with fishing, became even more enjoyable in a kayak.

Bird-Watching

Birds are wary of their surroundings. With keen eyesight and hearing, they are quick to take cover or flight whenever danger approaches. A softly paddled kayak offers a closer view of our feathered friends in their natural habitat.

Kayakers who combine paddling with birding have the opportunity to see many species across the seasons. Wood ducks with young hatchlings, least bitterns with fuzzy-topped chicks, and the noisy raucous calls from heron rookeries are the sights and sounds of summer floats. Belted

kingfishers perch high on tree branches to zero in on fish in the clear waters below, while Louisiana waterthrushes animate shorelines with their twisting and bobbing motions. Fall and winter outings allow for raptor sightings, including hawks and eagles.

I prefer kayaking during the spring migration. Nature comes alive with the chorus songs of colorful warblers, thrushes, and vireos. Resident birds also become more vocal during spring.

Wildlife Photography

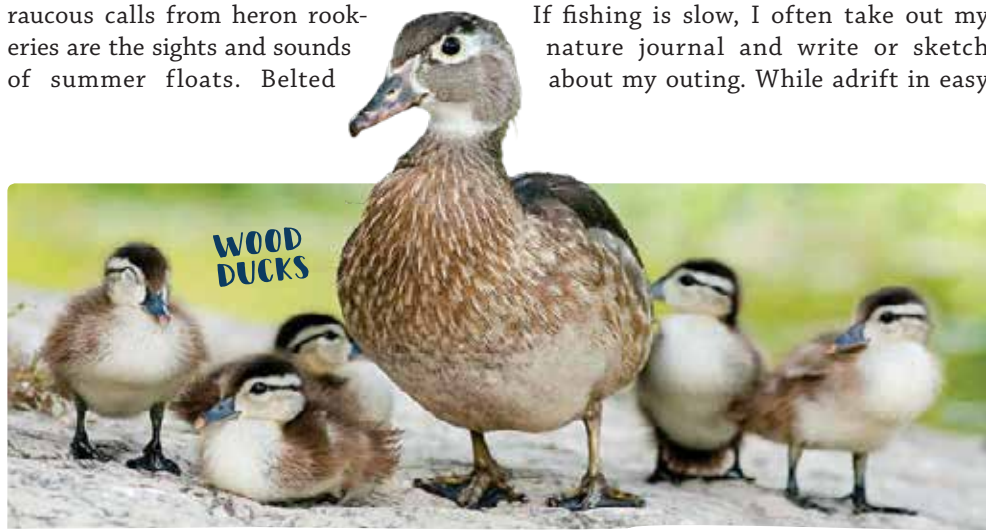
Sunrise and sunset are prime times for breathtaking views on the river. In calm waters, a kayak allows for a rather stable float, so you can zoom in on the scenery. The low sides of a kayak can help tremendously with wind issues.

Wildlife pay less attention when you're stealthily paddling a kayak than when you're walking around in waders trying to get a good snapshot. Streamside animals go about their daily routine and may swim quite close as you drift along. Kayakers frequently observe muskrats, mink, otter, and beaver.

Seeing your expensive camera and other equipment take a swim is always a fear while on the water, but for me the opportunities to capture interesting wildlife photographs make it worth the risk. I keep high-tech equipment, such as cameras and binoculars, tightly enclosed in a dry-float bag until I am in calmer waters.

Nature Journaling

If fishing is slow, I often take out my nature journal and write or sketch about my outing. While adrift in easy



NOPPADOL PAOTHONG



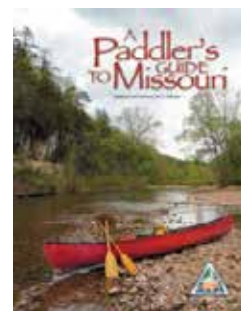
FAMILY FUN

Kayaking is fun for the whole family.



WHERE TO KAYAK

Missouri has an abundance of beautiful, floatable rivers and smaller streams. Conservation areas make it easy to get out on the water and enjoy a day of kayaking. MDC maintains public boat ramps and access sites throughout the state.



A Paddler's Guide to Missouri is a comprehensive guide to floating the state's streams. It catalogs over 50 of Missouri's rivers and their tributaries and includes a wealth of information for both novice and experienced paddlers. The book sells for \$8 plus tax and shipping. To purchase, call toll free 877-521-8632 or visit mdcnatureshop.com.

water, I am particularly fond of recording observations in my bird journal. I also like to keep careful notes on water conditions and any new submerged sandbars or debris hazards since my past float trips. I also keep a running log, complete with dates and locations, of any wildlife and scenery photographs I have taken.

All you need is a small notebook and a pencil, and entries can vary from simple sketches to in-depth narratives. Over time, you will build a valuable record for future reference and to recall special memories.

Safety First

Just like other boats and canoes, kayaks come with risks and responsibilities. Make sure you invest in a good-quality personal flotation device (aka life jacket) and wear it when you're on the water. For those new to kayaking, there are many experienced instructors and outfitters who can provide you with proper instruction regarding paddling techniques and safety tips.

Safety measures include packing a float bag with a first-aid kit and dry clothing. Wet clothing is not only uncomfortable, it can lead to hypothermia in colder temperatures. Also, be mindful of weight and space issues and include the items that are essential to safety and comfort. To prevent dehydration, be sure to pack plenty of drinking

water. Sun protection, insect repellent, and lightweight rain gear should also be part of your kayak's cargo.

While I enjoy being the captain of my personal kayak, there is great comfort in being in the company of others who share the joys of floating. Having family and friends along while out on the water makes for a safer trip. Inexperienced paddlers should never paddle alone. It is also a good idea to leave a copy of your party's intended float route and expected time of return with someone that you trust.

Get to know the stream you plan to float. Kayaking a stretch of swift stream requires more paddling skill than a wider channel with calmer water. Keep a careful lookout for debris piles (logjams, rocks), narrow channels, swift shoals, and changes to water depth.

Being aware of current weather conditions can help you stay safe. It is dangerous to be on the water when there is lightning. Should a lightning storm pop up while you're floating, be sure to bring your kayak to shore immediately and get off the water until the storm passes. ▲

Gladys J. Richter is a freelance nature writer from Richland, Missouri. She shares her love of the outdoors with her husband and her two sons.

THROWING A STICK WITH A STICK

ATLATL ENTHUSIASTS
EMBRACE AN ANCIENT TOOL FOR
HUNTING, COMPETITION

by Larry Archer

ON the wall of Dawn and Brian Wagner's Truxton home hangs Dawn's trophy buck. By traditional standards, "trophy" is a stretch — a spike buck, weighing in at less than 100 pounds.

"By no means is he a trophy, but he's a trophy in my eyes," Dawn said.

Harvested from a converted hunting blind in the back room of the couple's 107-year-old barn, the buck holds his place of honor not because of his size or impressive rack, but because he was her first.

First what you ask? This otherwise unimpressive buck is the first in the state — and possibly the nation — to be taken by a woman in modern times using an atlatl, an ancient hunting tool that uses a hand-held, arm-propelled launcher to project a 6-foot spear at its target.



A stick by any other name ...

The term atlatl is from the Aztec language of Hahuatl, but given its use throughout the world, it has many names:

- » Estolica (Spanish)
- » Propulseur (French)
- » Speerschleuder (German)
- » Woomera or miru (English versions of the most common Australian aboriginal terms)



▲ Atlatls, which have been used by prehistoric people around the world, come in a variety of styles and sizes, ranging from a simple notched stick to more complicated versions that include dart rests, counterweights, and finger loops.

PHOTOGRAPH BY DAVID STONNER

“Two yearlings came past the window,” she said. “All of a sudden, they looked back at a bigger-bodied deer. At first, I thought it was the mom of the two babies.”

It was actually a spike buck.

“It was probably a 13-yard shot,” she said. “He was eating the leaves off the apple tree, and that’s when I saw the perfect opportunity. He wasn’t looking at me and the other ones weren’t looking at me. I knew it was a real good throw.”

Although MDC doesn’t keep statistics on deer taken by atlatl (pronounced at-latl or atal-atl), it’s safe to say Dawn joins a relatively small group of Missouri atlatl hunters, a list that also includes Brian. Together, they represent two more firsts for the atlatl in Missouri.

“He’s the first one in our state to harvest two deer,” she said. “It actually makes us the first couple to harvest with the dart and atlatl.”

In 2011, a friend’s son introduced the Wagners to the atlatl. He visited their 18-acre homestead to give a new gift a try, and they quickly found themselves fascinated by it.

“Then it dawned on me what I could do with this,” Brian said. “When I picked it up and threw it a couple of times, I was like, oh, yeah.”

Brian got his first atlatl in January 2012 and harvested his first deer that October. The second followed two years later. Like many others who hunt with the atlatl, he is a lifelong hunter, having routinely harvested deer using both rifle and bow, and is attracted by the challenge of the atlatl, including its limited range of 15–20 yards for deer.

“My bow, my gun to me is not a challenge anymore,” he said. “I can hit what I’m aiming at. This is more of a challenge to me. It’s making me practice and learn it.”

From Hunting to Hobby to Hunting

Described by enthusiasts as “throwing a stick with a stick,” the atlatl is an 18–24-inch, hand-held spear launcher. It has a handle on one end and a socket on the opposite end that holds the end of the spear or “dart,” much like the nock of an arrow fits onto a bowstring. The additional leverage provided by the atlatl allows the user to



throw the dart much quicker — up to 100 miles per hour — than he or she could with arm-power alone.

For centuries, prehistoric cultures around the world used the atlatl for hunting. Early examples of the atlatl discovered in Europe date back to 15,000 B.C., with samples found in the Western hemisphere dating back to 11,000 B.C., according to the World Atlatl Association (WAA).

“In the Americas, there’s pretty good evidence they used them on mastodons and mammoths,” said Ron Mertz, co-founder of the Missouri Atlatl Association (MAA). “They were used throughout the Americas until about 2,000 years ago, and right around 2,000 years ago the bow and arrow began to replace it.”

Brian and Dawn Wagner at their Truxton home. Dawn appears in the window of the room in the back of their barn they use as a hunting blind. Each of them has harvested a deer with an atlatl from this blind. (Inset) Dawn poses with her harvest, the first taken by a woman in Missouri using the atlatl.



“MY BOW, MY GUN IS NOT A CHALLENGE ANYMORE. THIS IS MORE OF A CHALLENGE TO ME.” —Brian Wagner



The Atlatl: Missouri's Notable Harvests

Dawn Wagner's deer harvest in October marked the first in Missouri, and possibly in the nation, by a woman using an atlatl. Given that this ancient weapon was only approved for use in small game hunting in Missouri in 2007 and for deer hunting in 2010, it stands to reason that there would be a lot of firsts and notable harvests.

After being shutout in the first season, two Missouri hunters harvested deer with darts and atlatls within 24 hours of one another in 2011. Luke Boenker of Maryland Heights was the first Missouri hunter in the modern era to harvest a deer with an atlatl. Boenker took the four-point buck from a tree stand on Nov 12 in St. Louis County. A day later, Missouri's second atlatl-harvested deer was taken by Trenton hunter Scott Rorebeck in Grundy County in northwest Missouri.

Four years later, on Oct. 24, 2015, Defiance resident Paul Gragg brought down a 15-point buck — the largest reported deer harvested by atlatl in Missouri — while hunting on a friend's property in St. Charles County.



It's that connection to ancient cultures that ignites the interests of many atlatl enthusiasts, Mertz said. His own atlatl adventure began as he was teaching anthropology at Jacksonville State University in Alabama in the early 1970s. Through his research, he discovered Ray Madden, an atlatl enthusiast from Joplin and his MAA co-founder. Unlike Mertz, Madden's journey began in 1940s rural America with a young boy's imagination and enthusiasm, time on his hands, and access to decades of vintage issues of National Geographic.

"I began to see that Eskimos were using them, Australian Aborigines were using them, South American Indians were using them," Madden said. "They were used all over, so out came the old pocket knife and down to the edge of town to find something to cut down and start playing."

Although they arrived at the atlatl from different directions, their path forward was clear — reintroducing this tool to Missouri's hunting culture.

"Pretty much from the beginning, Ray and I were interested in getting it legal for hunting, so

we lobbied the department for six years," Mertz said. "We started in 2003–2004, and I think in 2007 it became legal for rabbits and small game. We really wanted it legal for deer."

After an initial meeting with MDC staff in 2003, Mertz and Madden took staff advice and approached Conservation Federation of Missouri (CFM) Executive Director Dave Murphy, who is now a member of the Missouri Conservation Commission, for guidance on navigating the regulation process.

"I had maybe read the word or encountered it two or three times," Murphy said of the atlatl. "I'm an avid bowhunter myself, and I had never run across it or had an awareness of it, but I was intrigued by it."

In addition to hunting and competing with the atlatl, Dawn Wagner also instructs others in its use at MDC events, like this one held at the August A. Busch Conservation Area.

Two years of attending CFM meetings and events with literature, displays, and demonstrations convinced the organization's membership and its executive director this ancient hunting tool had a place in the modern hunting landscape. The organization passed a resolution in 2006 supporting the atlatl for small game hunting and urged further study of its use for large game, like deer.

That resolution opened the door for a series of changes in the regulations, first allowing small game hunting beginning in 2007, then deer hunting during the firearms season in 2010, and finally, in 2011, atlatl use throughout the deer season, which remains the standard.

And, along the way, while wooing skeptics and changing regulations, Mertz and Madden also picked up new practitioners, including CFM's then-executive director.

"I'm enthusiastically a participant in it," Murphy said. "Mostly my interest is in just throwing darts, either for distance or for accuracy at targets, but I continue to hunt with it."

In fact, he has his eye on a first of his own.

"I got the crazy idea about three years ago that I wanted to be the first guy in the last 10,000 years or so to harvest a wild turkey with an atlatl," said Murphy, who has built two ground blinds designed for use with the atlatl. "I've had three opportunities to throw at turkeys, but they're still faster than my darts."



DAVID STONNER



Leilani England, St. Louis, first picked up an atlatl at an MDC event in 2016. In 2017, she was the World Atlatl Association's top female youth thrower.

Missouri Against the World

News coverage of Dawn Wagner's harvest in October introduced her to scores of new people, but many who follow atlatl closely already knew her. For the past three years, she has ranked in the top 10 in the world in the women's division of WAA's International Standard Accuracy Contest (ISAC), placing fifth in both 2017 and 2016.

But she's not an anomaly when it comes to Missouri's atlatl success against the world. Missouri men represented more than 13 percent of the 97 ISAC qualifiers in 2017, including two in the top 10. John Wood of Madison finished seventh — his fourth consecutive year in the top 10 — and Steve Spencer of Trenton rounded out the top 10.

While Missouri's success on the world atlatl stage is exciting for enthusiasts, those looking for the sport's future may well want to keep an eye on 13-year-old Leilani England of St. Louis.

An active outdoor enthusiast and hunter, Leilani finished fifth in the coed youth division in 2017 with a score that made her the world's top female youth thrower.

Leilani first picked up the atlatl at a 2016 event at MDC's Jay Henges Shooting Range and Outdoor Education Center in St. Louis County.

"I met Dawn down at Henges," Leilani said. "She was teaching a class, and I fell in love with it."

Dawn's satisfaction comes from introducing the next generation of outdoorswomen, like Leilani, to a skill they might not otherwise ever encounter.

"It warms my heart to know I was able to turn these young girls on to something that they've grown very fond of," she said. "It's a sport I've grown very fond of."

Part of the atlatl's attractiveness is its accessibility for many who have difficulty with traditional archery or haven't found success or satisfaction in other traditional sports, Brian said.

"Anybody who can throw can throw a dart and atlatl," Brian said. "We teach people in wheelchairs, 4-year olds, people in their 80s. Sometimes kids will come to me with a big strawberry on the side of their arm (from a bowstring burn)."

This combination of a rich history, accessibility, and simple fun turned the Wagners from being just hunters and competitors to being ambassadors for this ancient tool. In addition to teaching at events, they host throws at their home — a venue that includes a life-size mastodon target.

"The atlatl has been a real joy in my life and in Dawns' life," Brian said. "If you look at any photos that we take with any kids — or even adults — everybody's got a big ear-to-ear smile." ▲

Larry Archer is an editor in MDC's Outreach and Education Division and regular contributor of Missouri Conservationist's monthly Places To Go section. He enjoys time outdoors and is converting his backyard into a pollinator and wildlife haven.

For More Information

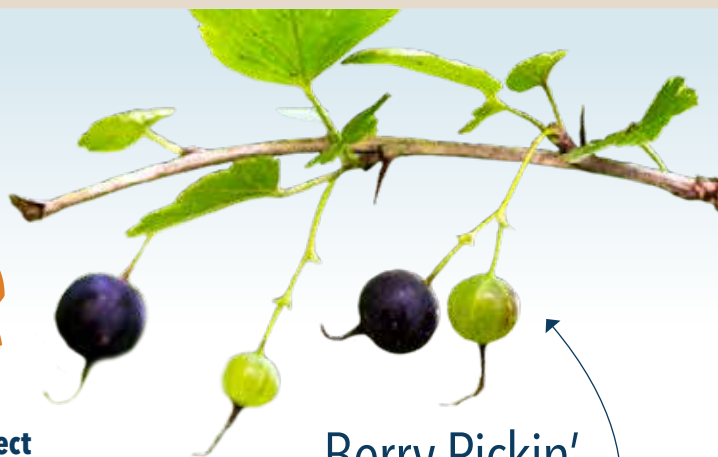
MDC regularly holds classes on atlatl use. To check for atlatl and other outdoor skills classes, visit short.mdc.mo.gov/ZTy. The Missouri Atlatl Association hosts a number of instructional events and competitions. MAA maintains a page on the World Atlatl Association website at short.mdc.mo.gov/ZTF.



Get Outside

in JUNE →

Ways to connect with nature



Berry Pickin'

If you have a craving for pie or homemade jam or jelly, you're in luck! **Gooseberries**, raspberries, and mulberries are beginning to ripen.



Song of Summer

Listen for the **annual cicadas** as they begin to sing.

Longest Day of the Year

June 20 is the Summer Solstice, also known as the first official day of summer. It's also the longest day of the year. With so many daylight hours, how will you use them to discover nature?

CENTRAL REGION

POLLINATORS: Monarch Mania

Saturday, June 9 • 8 a.m.-5 p.m.
Runge Conservation Nature Center
330 Commerce Drive, Jefferson City, MO 65109
No registration required. Call 573-526-5544 for information
All ages

Learn about the monarch butterfly and other pollinators in Missouri at this fun, family-friendly event. Take home a native plant. Talk to experts about butterflies, gardening, and butterfly habitats, and discover how you can help monarchs thrive. Activities include games, crafts, scavenger hunts, guided walks, presentations, videos, and a display by Missourians for Monarchs.



Soaking up the Sun

You won't be the only one catching some rays this summer! Watch for **nonvenomous northern watersnakes** basking near water.



Natural Events to See This Month

Here's what's going on in the natural world.



Tarantulas cross roads in southwest Missouri



Bobcat kittens are born through the month



Female coyotes wean pups

Find more events in your area at mdc.mo.gov/events

Missouri's Landscape is in Bloom

Look for lady's slipper orchids, tulip poplar trees, butterfly milkweed, prickly pear cactus, among others. The beauty of Missouri's landscape is waiting to be discovered. What will you find?



SOUTHEAST REGION

Neighbors in the Park

Saturday, June 30 • 1-4 p.m.

Cape Girardeau Conservation Nature Center
2289 County Park Drive, Cape Girardeau, MO 63701

No registration required. Call 573-290-5218 for information

All ages

You don't have to leave the city to enjoy exploring the outdoors. You can do it in your own neighborhood! Come down to Indian Park in downtown Cape Girardeau to try your hand at some fun outdoor activities you can do at home. Learn to pitch a tent in a tent race, so you can camp in your own backyard. Meet and learn about some wild animals that live near you. Practice casting and catch "fish" in our casting game, so you can fish the Mighty Mississippi later. Make a birdfeeder so you can attract birds and watch their antics. There's so much you can do right near you!



Baltimore oriole

Bird is the Word

June is a great time to be a birder in Missouri. Watch for birds carrying food to their young and for fledgling birds leaving the nest. Remember, never disturb these young animals.

Check out the ROD and REEL LOANER PROGRAM



Get hooked on fishing

The Rod and Reel Loaner Program lets you check out free fishing poles and tackle boxes. Offered at **more than 100 locations** throughout Missouri, the loaner program makes basic fishing accessible to everyone.

To find a loaner location near you, visit short.mdc.mo.gov/ZJq.



Serving nature and you®

Places to Go

SOUTHWEST REGION

Springfield Conservation Nature Center

Nature oasis in metropolitan Springfield extends outdoor learning beyond the school year

by Larry Archer

✧ When the final bell of the school year rings, how are parents to keep hungry minds fed? Springfield Conservation Nature Center Manager Rudy Martinez suggests an all-natural diet, taking advantage of the center's linear classrooms.

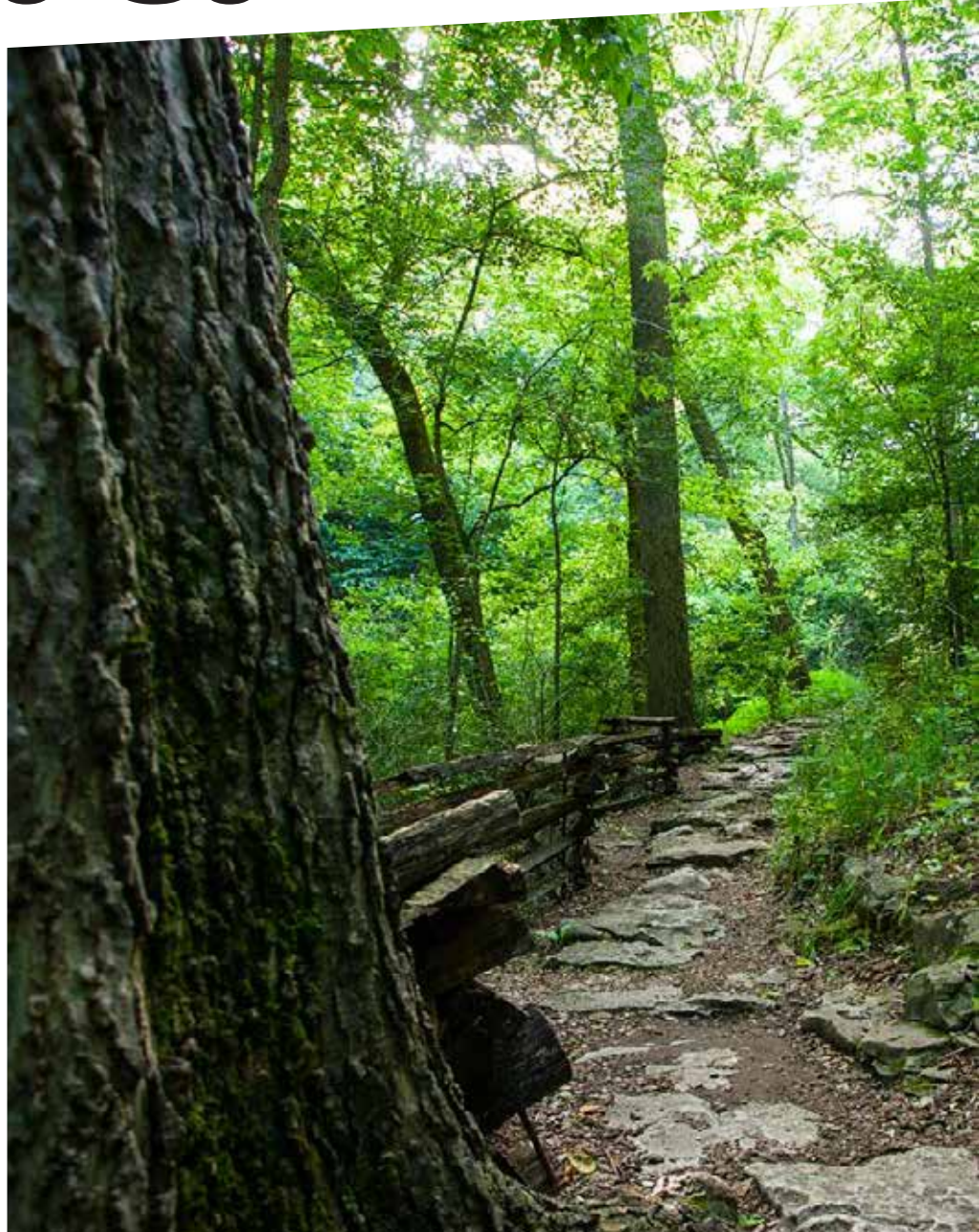
"We get a little over 250,000 visitors a year that come out specifically for the trails, so we know that's a number one draw here, especially in June when schools are out," Martinez said.

Located on Springfield's south side, the 79-acre nature center's nearly 3 miles of trails, some of which are paved and stroller friendly, offer nature viewing through savanna, wetland, forest, lake, and bottomland prairie habitats, Martinez said.

"It's a real diverse mix of ecosystems and habitats, where you probably are going to see the biggest variety of wildlife on the trail," he said.

When the weather discourages outdoor learning, class can resume indoors with the center's 3,000-square-foot exhibit area, age-specific programs, nature viewing area, and "nocturnal rooms," which focus on nature after dark and employ elements aimed at the nonvisual senses.

"You actually feel the wind. You can actually smell the forest floor, so we're exposing people to the various senses through these exhibits," he said.



SPRINGFIELD CNC: LARRY ARCHER



Springfield CNC's Long Trail takes hikers through forests (above), bottomland prairies, savannas, and glades, desertlike areas where the fringed poppy mallow (inset) grows. The nature center has nearly 3 miles of hiking trails.



SPRINGFIELD CONSERVATION NATURE CENTER

consists of 79 acres in Greene County. It is located in southeast Springfield just west of Highway 65 off the James River Freeway.

N37° 07' 49.44" | W93° 14' 24.00"

short.mdc.mo.gov/ZkG 417-888-4237

WHAT TO DO WHEN YOU VISIT



Bird-Watching Included on the Great Missouri Birding Trail (greatmissouribirdingtrail.com). The eBird list of birds recorded at Springfield CNC is available at short.mdc.mo.gov/Zqx.



Floating Springfield CNC includes frontage on Lake Springfield, allowing kayaking and canoeing opportunities. Lake access is available through Lake Springfield Park (short.mdc.mo.gov/ZqQ).



Hiking Nearly 3 miles of hiking trails within the nature center's boundaries, as well as connection to trails operated by Ozark Greenways and the Springfield-Greene County Park Board.



Tours Guided tours and programs are available to organized groups with at least two weeks' notice.

"Our interpretive exhibits are designed to be hands on, so we encourage people to touch things. That's what they're designed for."

—Springfield Conservation Nature Center Manager Rudy Martinez

WHAT TO LOOK FOR WHEN YOU VISIT



Great blue heron



Mink



Muskrat



Red-eared slider

Wild Guide



Eastern Spiny Softshell

Apalone spinifera spinifera

Status

Harvest is controlled to maintain healthy populations.

Size

Upper shell length: 5-9¼ inches (males); 7-17 inches (females)

Distribution

Found throughout the eastern half of the state



Did You Know?

Spiny softshells are defensive and have strong jaws. They will try to bite when captured.

With its long, tubular, snorkel-like snout and webbed toes, the spiny softshell is well equipped for an aquatic life. This species inhabits rivers and streams, lakes, and large ponds. It prefers habitats with muddy or sandy surfaces.



LIFE CYCLE

Active from March to October, the spiny softshell escapes winter's cold temperatures by digging 2-4 inches into the mud at the bottom of a river or lake. Courtship and mating occurs in April and May, and eggs are laid from late May through July. Females lay four to 32 eggs in a nest on a sand or gravel bar or a sandy opening near water. These hatch from late August to October.



FOODS

Spiny softshell turtles eat a variety of aquatic animals, including crayfish, insects, snails, tadpoles, and fish.



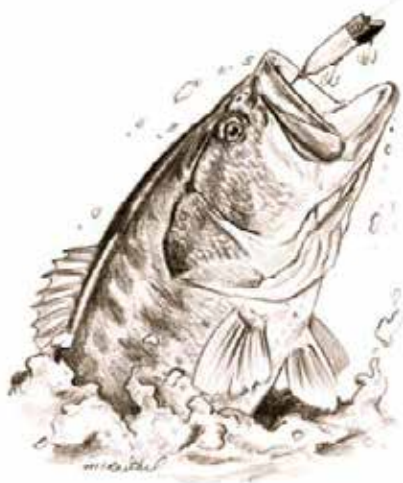
ECOSYSTEM CONNECTIONS

Although softshells may prey upon nearly any species of fish, there is no evidence to show they harm fish populations in natural waters. Like other components of our native aquatic ecosystems, they contribute to the balance of nature.

JEFFREY T. BRIGGLER

Outdoor Calendar

MISSOURI DEPARTMENT OF CONSERVATION



FISHING

Black Bass

Impounded waters and non-Ozark streams:
Open all year

Most streams south of the Missouri River:
May 26, 2018–Feb. 28, 2019

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2018

Nongame Fish Giggling

Impounded Waters, sunrise to sunset:
Feb. 1–Sept. 14, 2018

Streams and Impounded Waters,
sunrise to midnight:
Sept. 15, 2018–Jan. 31, 2019

Paddlefish

On the Mississippi River:
Sept. 15–Dec. 15, 2018

Trout Parks

Catch-and-Keep:
March 1–Oct. 31, 2018

Catch-and-Release:
Nov. 9, 2018–Feb. 11, 2019

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.

Buy Permits and Permit Card

Buy Missouri hunting and fishing permits from numerous vendors around the state, online at mdc.mo.gov/buypermits, or through our free mobile apps, MO Hunting and MO Fishing. Permit cards are an additional way to show proof of most permits. Buy a new permit card for a one-time fee of \$2 at mdc.mo.gov/buypermits. Buyers can select from four images: bass, buck, bluebird, or mallard duck.



HUNTING

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2018

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Crow

Nov. 1, 2018–March 3, 2019

Deer

Archery:

Sept. 15–Nov. 9, 2018

Nov. 21, 2018–Jan. 15, 2019

Firearms:

► Early Youth Portion (ages 6–15):

Oct. 27–28, 2018

► November Portion:

Nov. 10–20, 2018

► Late Youth Portion (ages 6–15):

Nov. 23–25, 2018

► Antlerless Portion (open areas only):

Nov. 30–Dec. 2, 2018

► Alternative Methods Portion:

Dec. 22, 2018–Jan. 1, 2019

Groundhog (woodchuck)

May 7–Dec. 15, 2018

Pheasant

Youth (ages 6–15):

Oct. 27–Oct. 28, 2018

Regular:

Nov. 1, 2018–Jan. 15, 2019



Quail

Youth (ages 6–15):

Oct. 27–Oct. 28, 2018

Regular:

Nov. 1, 2018–Jan. 15, 2019

Rabbit

Oct. 1, 2018–Feb. 15, 2019

Squirrel

May 26, 2018–Feb. 15, 2019

Turkey

Archery:

Sept. 15–Nov. 9, 2018

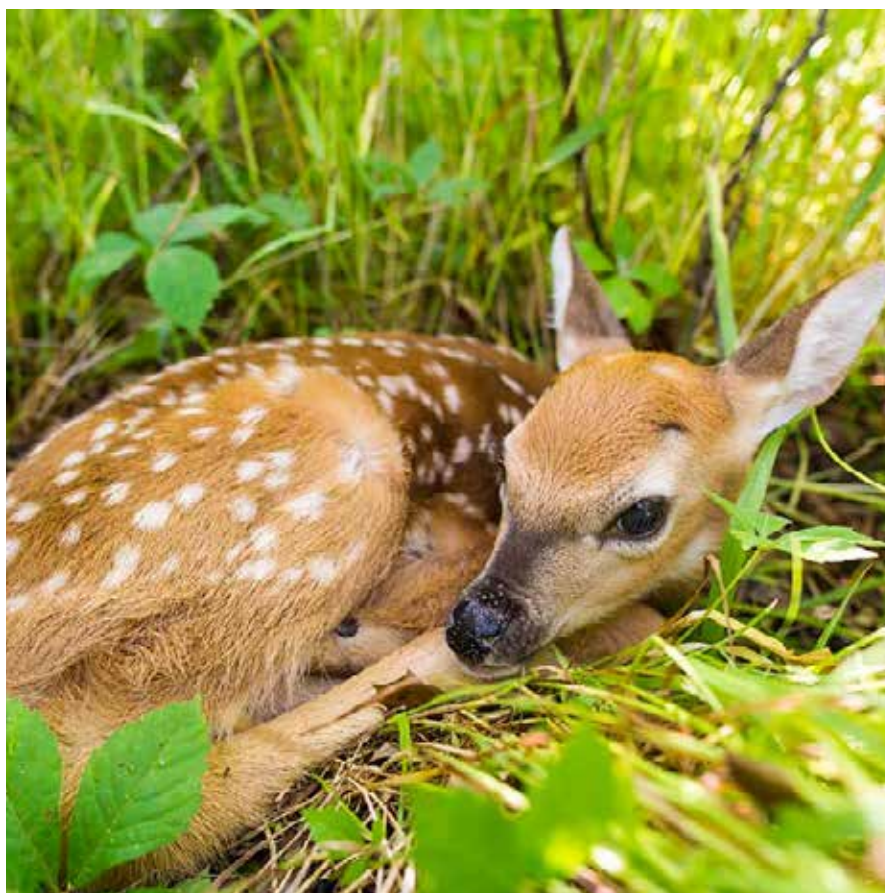
Nov. 21, 2018–Jan. 15, 2019

Firearms:

► Fall: Oct. 1–31, 2018

Waterfowl

See the Waterfowl Hunting Digest or visit short.mdc.mo.gov/ZZx for more information.



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White-tailed deer typically give birth to their young in late May or early June. If you find a fawn like this one while you're out discovering nature, remember it's not an orphan. Leave it where you find it, so its mother can care for it. Keep wildlife wild.

📷 by **Noppadol Paothong**